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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,832	10/27/2000	Kyung-Joon Chun	678-541(P9552)	7403

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EXAMINER
SHAH, CHIRAG G

ART UNIT	PAPER NUMBER
2664	4

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DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/698,832	CHUN ET AL.	
	Examiner	Art Unit	
	Chirag G Shah	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 19 rejected under 35 U.S.C. 102(e) as being anticipated by Phillips et al (U.S. Patent No. 6,243,377).

Phillips et al. discloses in figure 1 of using DSL system and discloses in column 1, lines 45-59 that DSL access technology, such as ADSL which provides up to about 9Mb/s downstream to subscribers and up to about 649kb/s upstream depending on length of the copper pair may be used, comprising: a MACS (EU14) having downlink channels that include a plurality of voice channels to transmit voice signals and a plurality of data channels to transmit data as in column 3, lines 8-24, and uplink channels that include a plurality of voice channels (analogue voice channels) to receive voice signals in response to the voice signals on the downlink voice channels and a plurality of data channels (digital data channel) to receive data in response to the data on the downlink data channels, for collecting voice signals and data destined for subscribers from a telephone network 19 and the Internet 18 as disclosed in figures 1 and in column 2, lines 66 to column 3, lines 24 (the subscriber unit 10 and the exchange unit 14 each have two

channels, namely a digital data channel and an analogue voice channel); and an IAD (RU 10 in figure 1) for receiving voice signals (analogue) on the downlink voice channels and data on the downlink data channels, transmitting the voice signals and data in TDM (Time Division Multiplex) formats to corresponding telephones and computers (as disclosed in column 2, lines 18-30 and in column 4, lines 4-50, and transmitting voice signals and data generated from the telephones and the computers to the MACS (EU14) on corresponding uplink voice channels and data channels in response to the received voice signals and data as disclosed in figures 1, 4 and in column 4, lines 4-50) as claims.

Referring to claim 19, Phillips et al. discloses in figure 1 and respective portions of the specification of an integrated access system having at least one telephone 13 and at least one computer 12 in an system (discloses in column 1, lines 45-59 that DSL access technology, such as ADSL which provides up to about 9Mb/s downstream to subscribers and up to about 649kb/s upstream depending on length of the copper pair may be used) comprising: a first adapter connected to the telephone and having TDM channel information associated with the first adapter, for converting a voice signal received from the telephone to voice data and transmitting the voice data on a corresponding TDM channel via a telephone line (as disclosed in figure 1 and in column 2, lines 1-17 and claim 1); a second adapter connected to the computer 13 and having TDM channel information associated with the second adapter, for transmitting data received from the computer on a corresponding TDM channel via the telephone line (as disclosed in figure 1 and in column 2, lines 1-17 and claim 1); Phillips further discloses in claim 1 of a home master (home connection equipment as disclosed in claim 1) having information about the channels of the adapters (and converting the incoming voice and internet data signals

for each subscriber into respective incoming TDM signals using the exchange connection equipment; and passing the incoming TDM signals to the subscribers over their respective telephone connection for conversion into separate voice and Internet data signals by their home connection equipment). Phillips discloses in claim 1 that home connection equipment (compressing voice data and data received via the telephone line and transmitting the compressed data via a general subscriber line as disclosed in column 1, lines 29 to column 2, lines 17) and the MACS (EU equipment) transmitting/receiving the voice data and data via a general subscriber line (DSL or ADSL 100) and separating the signals according to destination network and transmitting the separated signals to the corresponding networks as claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-11, 14, 15, 18 and 20-29 rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. in view of Pickett et al. (U.S. Patent No. 6,266,340).

Referring to claim 2, Phillips discloses in the integrated access system in figure 1 for enabling simultaneous transmissions of voice and data signals over a single subscriber line. Phillips fails to explicitly teach of discloses a plurality of first adapters and second adapters connected to the telephones and computers respectively for transmitting voice and data signals. Pickett et al. discloses in figure 2 and 3 of a plurality of first adapters

52 connected to the telephones 12 and having information about TDM channels associated with the first adapters (based on the TDM Bus), for detecting voice signals on corresponding voice channels from the TDM format based on the channel information transmitting the detected voice signals to the telephones, and transmitting voice signals received from the telephones on voice channels according to the channel information (as further disclosed in column 52, lines 39 to 65 that data streams may be coupled to a resource such as DSP 76 in order to "tap" into the various TDM data streams, processing to accomplish recognition voice or speech or data etc...); a plurality of second adapters 26 connected to the computers 24 and having TDM channel information associated with the second adapters (based on TDM Bus), for detecting data on corresponding data channels from the TDM format based on the channel information, transmitting the detected data to the computers, and transmitting data received from the computers on data channels according to the channel information (as further disclosed in column 52, lines 39 to 65 that data streams may be coupled to a resource such as DSP 76 in order to "tap" into the various TDM data streams, processing to accomplish recognition voice or speech or data etc...); and a home master (communication system 50) having information about the TDM channels (based on TDM bus and as further disclosed in column 52, lines 39 to 65 that data streams may be coupled to a resource such as DSP 76 in order to "tap" into the various TDM data streams, processing to accomplish recognition voice or speech or data etc...) of the first and second adapters, for transmitting voice signals and data received on downlink voice channels and data channels in the TDM format on corresponding channels according to the channel information (as disclosed in figure 2 and 3 and respective portions of the specification and in column 10, lines 1-39). Therefore, it

would have been obvious to one of ordinary skills in the art to modify the teachings of Phillips to explicitly include disclosing a plurality of first and second adapters connected to the telephones and computers in order to enable multiple mode/protocol voice and data transmission to be intelligently managed and controlled with a single, integrated system.

Referring to claim 3 and 20, Phillips discloses in claim 1 that home connection equipment and the MACS (EU equipment) transmitting/receiving the voice data and data via a general subscriber line (DSL or ADSL 100) and separating the signals according to destination network and transmitting the separated signals to the corresponding networks. Phillips fails to disclose of a compressor/decompressor, a speech switch, and MAC and a frame controller for TDM switching data. Pickett discloses in claim 1 and in column 8, lines 46-64 and in figure 3 and respective portions of the specification of, wherein the home master 50 comprises: a compressor/decompressor for separating the downlink voice signals from the downlink data, decompressing the separated data, compressing data destined for the MACS, combining the compressed data with transmission voice signals, and outputting the combined signals on uplink voice channels and data channels corresponding to the downlink voice channels and data channels (Pickett discloses in column 8, lines 48-64 and in figure 3 that Processor 70 that controls communication system 50 (home master) and 70 also may be connected to DSP 76, which serves to provide a variety of functions within communication system 50 (home master) including compression and decompression); a speech switch for TDM-switching the voice signals (as disclosed in column 52, lines 39-65 and in figure 3); a MAC (Medium Access Controller) for TDM-switching the data as disclosed in column6, lines 15-50 ; a frame generator 72 for generating a frame with the TDM-switched voice signals and data in the

TDM format as disclosed in the abstract and in column 8, lines 14 to 64; framer includes the capability to transfer raw or protocol-processed data, which may be mapped to particular slots of TDM bus) ; and a controller having the channel information of the adapters, for TDM-switching the speech switch and the MAC according to the channel information and controlling the frame generator to generate the frame (framer is controlled by processor/system resources as diagrammatically indicated by control links as disclosed in column 8, lines 14-47) as claim. Therefore, it would have been obvious to one of ordinary skill in the art modify the teachings of Phillips to include the teachings of Pickett in order to be enable multiple mode/protocol voice and data transmission to be intelligently managed and controlled with a single, integrated system.

Referring to claims 4 and 21, Phillips teaches in column 1, lines 29 to column 2, lines 17 and in figures 2 and 6 that the integrated access system of claim 3, wherein the frame generator generates the frame using information notified from a sync channel for detecting a start point of a data frame, a telephone frequency band channel for transmitting a call process signal and a voice signal, at least one data channel for transmitting data, and a D channel for transmitting, signaling signals of the telephone frequency band channel and the data channel as claim.

Referring to claim 5, Phillips discloses in claim 1 that home connection equipment and the MACS (EU equipment) transmitting/receiving the voice data and data via a general subscriber line (DSL or ADSL 100) and separating the signals according to destination network and transmitting the separated signals to the corresponding networks. Phillips further discloses in column 1, lines 29 to column 2, lines 17 and in claim 1 that a subscriber line interface for separating a telephone frequency band channel signal from

the downlink voice signals and data, combining a transmission telephone frequency band signal with transmission voice signals and data, and transmitting the combined signals on uplink channels corresponding to the downlink channels; Phillips fails to disclose a CODEC for converting the telephone frequency band signal to a voice signal; and a transmission modem for decompressing the voice signals and data free of the voice signal of the telephone frequency band channel and separating the voice signals and data from the decompressed signals. Pickett discloses in column 9, lines 25-64 that TDM bus 78 in figure 3 is coupled to cards 82 such as CODEC, line interface for converting telephone frequency band signal to a voice signal band and further discloses in column 52, lines 39 to 65 of transmission modes for separating voice and data signals. Therefore, it would have been obvious to one of ordinary skill in the art modify the teachings of Phillips to include the teachings of Pickett in order to be enable multiple mode/protocol voice and data transmission to be intelligently managed and controlled with a single, integrated system.

Referring to claims 6, 7, 23 and 24, Phillips discloses in claim 1 that home connection equipment and the MACS (EU equipment) transmitting/receiving the voice data and data via a general subscriber line (DSL or ADSL 100) and separating the signals according to destination network and transmitting the separated signals to the corresponding networks. Phillips fails to disclose the limitation set forth in the claim. Pickett discloses in claim 1 and figure 21 and respective portions of the specification of master clock generator for generating a master clock signal to operate the IAD. The integrated access system further comprising a signaler as disclosed in the in column 9, lines 47, figure 3, claim 1 and abstract for receiving the clock signal, generating ring

tones under the control of the controller upon call incoming, and generating dial tones or busy tones upon call origination (the DSP which is coupled to the TDM bus; the plurality of interface cards includes a clock; TDM is coupled to the cards; thus DSP provides various signal processing and telecommunications support, such as dial tone generation and DTMF detection) as claim. Therefore, it would have been obvious to one of ordinary skill in the art modify the teachings of Phillips to include the teachings of Pickett in order to be enable multiple mode/protocol voice and data transmission to be intelligently managed and controlled with a single, integrated system

Referring to claim 8, 9, and 26, Phillips discloses in figure 1, 4 and 5 and respective portions of the specification the integrated access system of claim 2, further comprising a power switch (relay) for bypassing a telephone frequency band channel signal received through a subscriber line to the first adapters on a power-off condition (failure in power supply or equipment) as claim.

Referring to claims 10, 11, 14, 15 and 28, Phillips discloses in figure 1 and in figure 4 and respective portions of the specification the integrated access system, wherein each of the first adapters 10 comprises: a driver/receiver for receiving the frame (TDM signals/frames passing between subscriber premise and the exchange are transmitted and received on the subscriber line 100); Phillips discloses in claims 1 and 2 of a transmission/reception controller (Home connection devices) for receiving a voice signal on a corresponding channel of the frame according to the TDM channel information, converting a signal received from a telephone connected to the first adapter to a voice signal, and transmitting the voice signal on an uplink channel (from RU 10 to EU 14 via 100 as illustrated in figure 1) corresponding to the corresponding downlink channel;

Phillips further discloses in column 4, lines 10-24 that each of the data interface SLIC and bypass circuit are under control of the microprocessor 41 which also activates a ring signal generator 49 for the telephone devices when an incoming call is detected at the exchange premises. Phillips further discloses in claim 1, that frame (stream) is transmitted via a telephone line as claims 11 and 15. Phillips fails to disclose of a clock recovery circuit for recovering a clock signal synchronized with a master clock signal from the voice signal and a signaler for generating ring tones in accordance with the clock signal under the control of the transmission/reception controller upon call termination. Pickett discloses in claim 1 and figure 21 and respective portions of the specification of master clock generator for generating a master clock signal to operate the IAD. The integrated access system further comprising a signaler as disclosed in the in column 9, lines 47, figure 3, claim 1 and abstract for receiving the clock signal, generating ring tones under the control of the controller upon call incoming, and generating dial tones or busy tones upon call origination (the DSP which is coupled to the TDM bus; the plurality of interface cards includes a clock; TDM is coupled to the cards; thus DSP provides various signal processing and telecommunications support, such as dial tone generation and DTMF detection) as claim. Therefore, it would have been obvious to one of ordinary skill in the art modify the teachings of Phillips to include the teachings of Pickett in order to be enable multiple mode/protocol voice and data transmission to be intelligently managed and controlled with a single, integrated system.

Referring to claims 18 and 29, Phillips discloses in figure 1 and claim 1 wherein the MACS (EU, 14) comprises: an interface for interfacing signals with the telephone network 19 and the Internet 18; a voice/data separation and interfacing unit for

combining signals received from the telephone network under a predetermined control according to each home master (as disclosed in claim 1 and 2, where each EU includes a voice/data separation and interfacing unit for combining singles received from the telephone network to each home connection device); and a controller having channel information about each home master (as disclosed in claim 2 and as disclosed in column 4, lines 63, where EU 14 is under control of microprocessor 51 with suitable memory controlling data flow between the subscriber equipment and exchange equipment 14), for controlling the voice/data separation and interfacing unit according to the channel information and controlling the transmission modem to compress the combined signals. Phillips discloses in claim 1, column 2, lines 1-17 and figure 1 of a compressed transmission format such as 2B1Q, but Phillips fails to disclose a transmission modem for compressing the combined signals under a predetermined control and transmitting the compressed signals through a general subscriber line. Pickett discloses of using in column 52, lines 39 to 65 of transmission modes for compressing the combined signals under control, thus enabling transmission of the compressed signals through a subscriber line. Therefore, it would have been obvious to one of ordinary skill in the art modify the teachings of Phillips to include the teachings of Pickett in order to be enable multiple mode/protocol voice and data transmission to be intelligently managed and controlled with a single, integrated system.

Referring to claim 22, Phillips discloses the system of claim 21, wherein the data channel includes at least one voice channel for transmitting voice data as disclosed in figure 2, column 3, lines 25-51 as claim.

Referring to claim 27, Phillips discloses in claims 1, 2 and in figure 1 that EU transmits a signal on the D channel (column 2, lines 25-51) to the home master (RU), converting a voice signal received from the telephone to a voice signal and transmitting the voice signal on a corresponding TDM channel via telephone line. Phillips fails to disclose first adapter comprises: a on-hook detector for detecting the on-hook state/off-hook state of the telephone; a clock recovery circuit for recovering a clock signal synchronized with the master clock signal from the voice signal; a signaler for generating a DTMF signal in accordance with the clock signal under the control of a transmission/reception controller upon call origination; and a transmission/reception controller for transmitting an hook-on/hook-off signal to the home master upon detection of the on-hook state/off-hook state, transmitting a DTMF signal on the D channel to the home master during dialing, converting a voice signal received from the telephone to a voice signal, and transmitting the voice signal on a corresponding TDM channel via the telephone line. Pickett discloses a signaler as disclosed in the in column 9, lines 47, figure 3, claim 1 and abstract for receiving the clock signal, generating ring tones under the control of the controller upon call incoming, and generating dial tones or busy tones upon call origination (the DSP which is coupled to the TDM bus; the plurality of interface cards includes a clock; TDM is coupled to the cards; thus DSP provides various signal processing and telecommunications support, such as dial tone generation and DTMF detection). Therefore, it would have been obvious to one of ordinary skill in the art modify the teachings of Phillips to include the teachings of Pickett in order to be enable multiple mode/protocol voice and data transmission to be intelligently managed and controlled with a single, integrated system.

5. Claims 12-13 and 16-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips in view of Pickett as applied to claim 2-10, 14, 18 and 20-29 above, and further in view of Carlsen (U.S. Patent No. 5,953,409).

Referring to claims 12-13 and 16-17, Phillips in view of Pickett fails to disclose the integrated access system, wherein the frame is transmitted via a telephone line. Phillips in view of Pickett fails to disclose the integrated access system comprises a line interface for matching impedance with respect to the length of the telephone line. In addition, further comprises a voltage detection and switching unit for detecting the voltage of the telephone line and bypassing a signal received via the telephone line to the telephone on a power-off condition. Carlsen discloses in the abstract, claim 1 and column 1, lines 39 to column 2, lines 49 of an interface unit for providing impedance matching with the impedance Z between two transmission line terminals and a transmitter/receiver unit connected and a device for sensing the voltage across the two terminals of the transmission line. This provides a method enabling matching of impedance of transmitter/receiver, such as a telephone or a modem. As the interface unit adapts its output impedance to the impedance of the transmission line, a telephone for a PSTN network may be used globally inspite of the different impedances of the individual networks, without having to be designed with an impedance-specific interface. Therefore, it would have been obvious to one of ordinary skill in the art modify the teachings of Phillips in view of Phillips to include the teachings of Pickett in order to improve quality in the communication channel.

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Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 703-305-5639. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs

Ajit Patel
Primary Examiner